The Carolina Lupus Study

The Carolina Lupus Study Newsletter

No. 4, February 2000

Greetings Carolina Lupus Study participants, referring physicians, and appointment clinics. Data collection ended in July 1999. We would like to again thank all of you who have contributed so much. The high level of participation of the patients is especially gratifying since it indicates that our work will be of interest to those affected by this disease.

We are pleased to report some preliminary results to you. The final number of study participants is 620; 265 patients and 355 representatives of the study area population. These 355 people serve as the comparison group to the patients, and we're sure that the patients will join us in thanking them for their involvement. Without this comparison group the results would not be meaningful.

The following table shows our response rates, which are considered quite good:

	Contacted eligible	Participated	Provided blood sample
Patients	268	265 (99%)	244 (92%)
Pop. Controls	428	355 (83%)	303 (85%)

We thank all of the 79 physicians who referred patients to the study. (See the list on the last page.) The number of referrals from individual physicians ranged from one to 44. Half of the patients were referred from the university-based rheumatologists (at Duke, UNC, ECU, and MUSC) and half from community-based physicians.

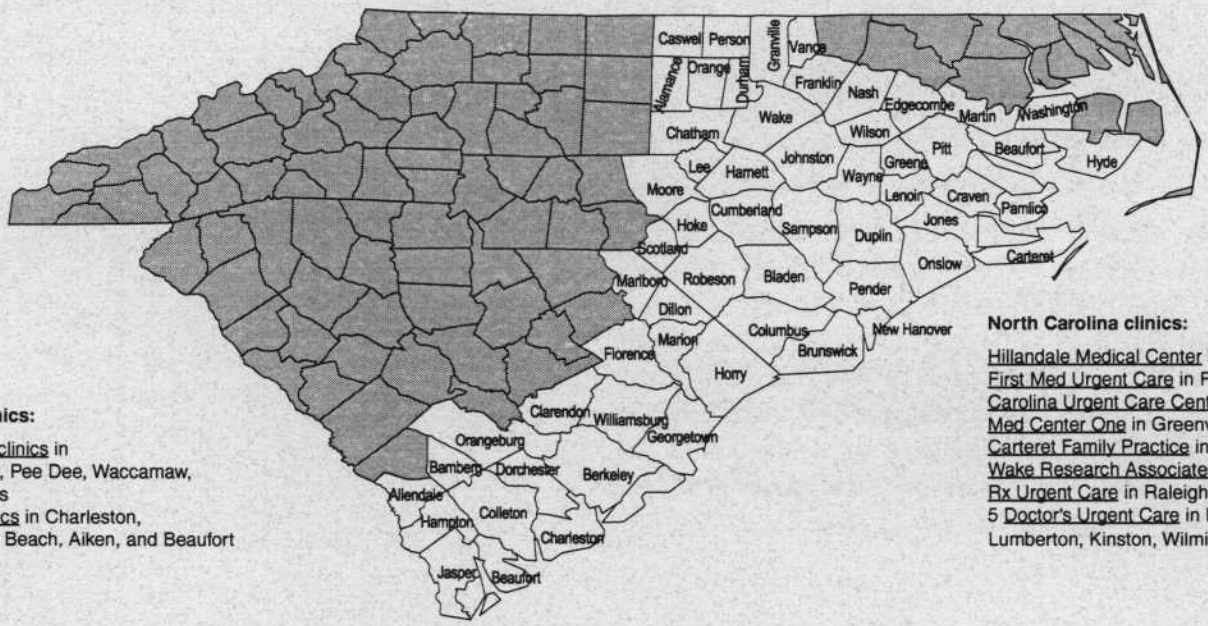
This shows how essential it was to include both kinds of practices in our study. Without both groups we would not be fully representing the lupus patients in the area.

Forty-one clinics assisted by collecting blood samples and providing a private space. See the lists under the map of the study area.

Our very professional and skilled interviewers, Alesia Sanyika and Gwen McKoy in North Carolina and Sara Graham in South Carolina made 4335 phone calls and drove over 97,000 miles (!!) to meet the participants.

Our gratitude goes also to the coordinators in the major medical centers: June Arnold at MUSC, Sharonda Cooper at ECU, Dana Pitely at UNC, and Ella Akin and Karen Rodin at Duke.

As has been seen in other studies, most (90%) of the patients were female. Although African-Americans make up only 30% of the population of the study area, 60% of the lupus patients were African-Americans. This reflects the greater risk of the disease among blacks compared with whites. We hope that our study will help shed light on the reasons for this excess risk. Lupus tends to strike young and middle-aged adults. The average age at diagnosis of our patients was 39 years, but it was younger in blacks (37) compared with whites (43). However, older people can develop lupus; 23% of patients were over 50 years of age at diagnosis.



South Carolina clinics:

21 state-run DHEC clinics in Low Country, Edisto, Pee Dee, Waccamaw, and Wateree districts
8 Doctor's Care clinics in Charleston, Summerville, Myrtle Beach, Aiken, and Beaufort

North Carolina clinics:

Hillandale Medical Center in Durham
First Med Urgent Care in Fayetteville
Carolina Urgent Care Center in Rocky Mount
Med Center One in Greenville
Carteret Family Practice in Morehead City
Wake Research Associates in Raleigh
Rx Urgent Care in Raleigh
5 Doctor's Urgent Care in NC, in Goldsboro, Lumberton, Kinston, Wilmington, and Garner

Clinical Features of Patients in the Carolina Lupus (CLU) Study

Lupus is a complex disease with many different symptoms. It is often described as a "systemic" or "multi-system" disease because so many different parts of the body can be affected. This includes the skin, joints, kidneys, nervous system, and cardiovascular (heart and blood vessels) system. Here is a description of some of the conditions seen in lupus and a summary of how often these occurred among patients in the Carolina Lupus Study.

Arthritis and arthalgia involves swelling or pain in the joints such as the knees, wrists, or fingers. This was very common in the Carolina Lupus Study: 85% of patients had joint problems.

Serositis means inflammation around the lungs (**pleuritis**) or heart (**pericarditis**). It was also frequently seen in the Carolina Lupus Study patients. Chest pain is a common symptom of pleuritis.

Renal or **kidney** impairment is one of the most serious complications of lupus. An early sign of possible kidney damage is the presence of protein in the urine (**proteinuria**). That is why a urine sample is often requested as part of lupus patient's check-up. Proteinuria was three times more common in African-American patients compared with white patients in the Carolina Lupus Study. This difference has been reported in other studies. It is important to learn the reasons for this difference.

Lupus patients experience many different types of rashes. One common rash is called a butterfly or **"malar" rash**. It most often occurs over the cheeks and is quite reddish and can be painful. Another common type of rash is called **discoid** lupus. It can occur anywhere (arms, legs, face, or any other area), and is a thick, scaly lesion. When it occurs on the scalp it can be accompanied by **"alopecia"** which means patchy hair loss. Another common symptom among lupus patients is **"photosensitivity"**, which is a kind of a rash that develops on sun-exposed areas of the skin. Photosensitive reactions are different from sun-burning or sun-tanning. African-American patients in the Carolina Lupus Study were more likely than white patients to have discoid lupus, but were less likely to have other forms of rashes.

There are several different blood disorders that involve low levels of certain types of blood cells. For example, **leukopenia** means low counts of white blood cells and **thrombocytopenia** means low counts of platelet cells. Anemia refers to low numbers of red blood cells. The various types of blood disorders can lead to problems in fighting infections (the job of the white blood cells), carrying iron (the job of the red blood cells), or properly clotting when there is an injury (the job of the platelets).

Some of the less common, but serious symptoms are **"neuropsychiatric,"** that is, they involve the brain and nervous system. These include **seizures** (a sudden loss of control involving convulsions or spasms) and **psychosis** (severe disorientation, being "out of touch" of reality, loss of ability to communicate).

In an autoimmune disease, the immune system creates antibodies directed against its own body. Lupus is characterized by antibodies directed against parts of the cell, such as the nucleus (anti-nuclear antibodies, or ANA) or DNA (anti-DNA antibodies). The level of anti-DNA antibodies often increases during a lupus flare. Some autoantibodies, such as Ro and La, are also seen in patients with other autoimmune diseases.

Symptoms	All patients	African-Americans	Whites
Arthritis/arthralgia	85%	86%	84%
Serositis	46%	45%	47%
Kidney damage (protenuria)	32%	42%	16%
Skin conditions			
malar rash	43%	40%	50%
discoid rash	16%	23%	3%
photosensitivity	44%	35%	61%
Blood disorders			
leukopenia	28%	33%	19%
thrombocytopenia	12%	13%	12%
Seizures or psychosis	8%	12%	2%
Autoantibodies			
antinuclear (ANA)	98%	97%	99%
anti-DNA	62%	66%	55%
anti-Sm	29%	38%	15%
RNP	42%	57%	15%
Ro (SSA)	35%	40%	26%
La (SSB)	19%	18%	13%

The First Analysis: Allergies, Infections, and Other Medical Conditions - Are They Related to the Risk of Developing Lupus?

We asked about many different topics (medical history, pregnancies, work history, and other experiences) in our study. It is unlikely that any one thing causes lupus, but we want to know how the combined experiences of people who develop lupus differs from those of people who do not get this disease. The analysis of medical conditions was one of the first topics we examined. Although it is well-known that lupus patients are more prone to infections and other serious medical conditions once they have the disease, we wanted to know if there were specific illnesses that were more common in lupus patients before they developed lupus. Two of the broad areas we examined were allergies and infections. The immune system plays a central role in both of these areas, as it does in lupus.

Allergies: People with lupus were much more likely than people without lupus to report an allergy to a medication (particularly sulfa drugs and penicillin): 45% of patients compared with 28% of the comparison group reported some kind of medication allergy. This difference was not seen with allergies to foods, insects, animals, or poison ivy. So rather than a generalized susceptibility to allergies, this increased susceptibility seems to be limited to specific kinds of medications.

Infections: There was little difference in the frequency of most bacterial or viral infections (colds, urinary tract infections mononucleosis, hepatitis) between patients and controls. However, twice as many patients (6% compared with 3% of the comparison group) said that they had shingles. Shingles is a rash caused by the same virus that causes chicken pox. Everyone who has had chicken pox carries the virus, but the virus usually remains dormant (hidden). Sometimes, though, the virus becomes active again, and the result is an "eruption" or rash that can be very painful. Periods of stress may cause the virus to become active, and people with suppressed immune systems (because of a disease or because of medications) are at increased risk of developing shingles. (None of the people in our study were taking immune-suppressing drugs at the time they got shingles.) One other study reported an increased prevalence of shingles in patients with lupus. Combined with our results, this suggests that the role of this kind of dormant-and re-emerging virus (and the role of stress) in lupus should be examined further.

Although there has been a great deal of publicity about **medical devices** such as breast implants and autoimmune diseases, we found no evidence in our study that any kind of medial device was related to the risk of developing lupus: 7% of patients and 7% of the comparison group reported they had some kind of device such as pace makers, dental implants, or artificial joints or pins.

These are some of the highlights of the medical history analysis. These results were presented at the November, 1999 annual meeting of the American College of Rheumatology. We will keep you informed as other analyses are completed and as publications from our study become available.

We're on the Web!

http://dir.niehs.nih.gov/direb/clu/home_clu.htm

The web site contains the latest newsletter and information about publications and presentations related to the study. We will update the site as new information is available. If you have suggestions or questions, please call Lyle Lansdell at 1-800-948-7552, ext 122.

Follow-up Study Planned, Summer of 2000

We are very interested in how our study patients are doing and their experiences regarding medications, other therapies, work, disability, and other issues affecting quality of life. We plan to re-contact patients (and possibly some of the comparison group) this summer. This study will involve a short (20 minute) telephone interview. Each of you is very important to the study, and we hope your kind cooperation will continue.

Carolina Lupus Study Physicians

The Carolina Lupus Study would not be possible without the efforts of the rheumatologists and other physicians who offered to refer patients to the study. Thanks to all of you for your help.

North Carolina

Community-based physicians:

- Jeffrey A. Alloway
- H. Vann Austin
- Faye Banks
- Franc. A. Barada
- George Brothers
- Walter Chmelewski
- Duncan Fagundus
- David Fraser
- Stephen G. Gelfand
- Helen Harmon
- Robert A. Harrell, III
- John L. Harshbarger
- Jesus Hernandez
- G. Wallace Kernodle, Jr.
- Elliot J. Kopp
- Kara Martin
- Cathleen Melton
- John L. McCain
- Kevin M. McKnight
- Gwenesta B. Melton
- G. Radford Moeller
- William Olds
- David W. Puett
- C. Michael Ramsdell
- Byron Randolph
- Michael D. Rodman
- A. Silvia Ross
- Gregory F. Schimizzi
- Teresa Smith
- David H. Snow
- Thomas Speros
- Claudia J. Svara
- Anne K. Toohey
- Evelyn Schmidt
- Randal E. White
- Suzanne J. Zorn

Duke University Medical Center:

- Nancy B. Allen
- Karen Hansen
- Thomas Lang
- Rex McCallum
- Elvia Moreta
- Bill St. Clair
- Dylan Steer
- John Sundy
- Ralph Tabib

East Carolina University School of Medicine:

- Edward L. Treadwell

University of North Carolina at Chapel Hill:

- Robert G. Berger
- Philip L. Cohen
- Mary Anne Dooley
- James E. Godwin
- Nortin Hadler
- Westley Reeves
- Ann Reed
- Alfredo Rivadeneira
- John B. Winfield
- William Yount

South Carolina

Community-based physicians:

- Carlysle Barfield
- Walter Bonner
- John Brittis
- Douglas Conaway
- William M. Edwards
- Mitchell Feinman
- Gary E. Fink
- Frank E. Harper
- Peter D. Hyman, Jr.
- Wendy Lee
- Holly Mitchell
- Alan I. Nussbaum
- Georgia Roane
- William B. Sheldon
- Robert Turner

Medical University of South Carolina:

- Marcy Bolster
- Gary S. Gilkeson
- Scott Hollingsworth
- C. W. Legerton, III
- Greg Neimer
- Jim Oates
- Richard Silver
- Edwin Smith

Why is this disease called "lupus?"

"Lupus" is the Latin word for wolf. So what does that have to do with joint pains, rashes, and autoimmune diseases? One explanation is that the malar or butterfly rash seen in 30-50% of lupus patients was described as "resembling the markings of a wolf." But the term "lupus" has been used since the 1400s to describe many different kinds of rashes or ulcers on the skin. It wasn't until 1872 that the connection was made between specific rashes and a more systemic, generalized disease that was then named "lupus erythematosus disseminatus." The physician who made this connection was Moritz Kaposi, who is well-known today for his work describing Kaposi's sarcoma. For more information see Brian Potter's article "The History of the Disease Called Lupus" in the *Journal of the History of Medicine and Allied Sciences*, 1993, vol 48, pp:80-90.